

1. A method for enabling a disk array storage facility to handle overlapped input-output requests to a single logical volume wherein the input-output request contains a plurality of predetermined parameters, said method comprising the steps of:
  - A) establishing a table for the logical volume with an entry input-output requests and corresponding parameters,
  - B) testing the parameters for each new input-output request with respect to the parameters for input-output request entries in the table,
  - C) responding to said testing by performing one of a plurality of control functions which control functions include enabling the processing of the input-output request by the storage facility.
2. A method as recited in claim 1 wherein each input-output request specifies an address range as a parameter, said parameter testing including the step of comparing the address range in the new input-output request with the address range of each input-output request in the table.

3. A method as recited in claim 2 wherein the storage facility additionally includes an overlap polling queue and wherein said parameter testing step places the input-output request on the overlap polling queue and said method additionally includes polling the entries on the overlap polling queue.
4. A method as recited in claim 3 wherein said polling of entries on the overlap polling queue enables the new input-output request to be processed.
5. A method as recited in claim 3 wherein each input-output request includes other parameters and wherein said testing compares each of the other parameters of the new input-output request with the corresponding parameters of the input-output requests in the table.
6. A method as recited in claim 3 wherein a second parameter defines an input-output request that requires the entire

logical volume to be dedicated to that input-output request, said testing of the second parameter including:

- i) terminating the method in response to a first value of the second parameter in an existing input-output request in the table, and
- ii) placing the input-output request on the overlap polling queue in response to a first value of the second parameter in the new input-output request.

7. A method as recited in claim 6 wherein a third parameter has a first value that defines an input-output request to be processed without interruption, said testing of the second parameter including:

- i) placing the new input-output request on the overlap polling queue if the third parameter for either the new or existing input-output request has the first value, and
- ii) enabling the comparison of the addresses in the input-output requests if neither of the new and

existing input-output requests has the first value of the third parameter.

8. A method as recited in claim 3 wherein said step of establishing the table includes defining a table with a predetermined capacity and wherein said method additionally includes the step of responding to the receipt of a new input-output request by enabling said testing after determining the availability of an entry location in the table.
9. A method as recited in claim 8 wherein the storage device includes an available entry polling queue and an available entry polling procedure interacts with the entries in the available entry polling queue to identify an available entry for the new input-output request.
10. A method as recited in claim 9 wherein said step of testing the availability of an entry in the table includes an iterative process that tests the availability of an entry in

the table over a predetermined interval prior to placing information about the new input-output request on the available entry polling queue.

11. A method as recited in claim 10 wherein each input-output request includes other parameters and wherein said testing compares each of the other parameters of the new input-output request with the corresponding parameters of the input-output requests in the table.
12. A method as recited in claim 11 wherein a second parameter defines an input-output request that requires the entire logical volume to be dedicated to that input-output request, said testing of the second parameter including:
  - i) terminating the method in response to a first value of the second parameter in an existing input-output request in the table, and
  - ii) placing the input-output request on the overlap polling queue in response to a first value of the second parameter in the new input-output request.

13. A method as recited in claim 12 wherein a third parameter has a first value that defines an input-output request to be processed without interruption, said testing of the second parameter including:
- i) placing the new input-output request on the overlap polling queue if the third parameter for either the new or existing input-output request has the first value, and
  - ii) enabling the comparison of the addresses in the input-output requests if neither of the new and existing input-output requests has the first value of the third parameter.
14. A method as recited in claim 11 wherein a third parameter has a first value that defines an input-output request to be processed without interruption, said testing of the second parameter including:
- i) placing the new input-output request on the overlap polling queue if the third parameter for

- either the new or existing input-output request has the first value, and
- ii) enabling the comparison of the addresses in the input-output requests if neither of the new and existing input-output requests has the first value of the third parameter.